PCT10

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/009,570

DATE: 01/14/2002 TIME: 07:39:10

Input Set : A:\78883169.app

Output Set: N:\CRF3\01142002\J009570.raw

```
3 <110 → APPLICANT: DONALDSON, IAIN ALASDAIR
                                                                      ENTERED
              RASMUSSEN, THOMAS BRUUN
      6 -: 120 - TITLE OF INVENTION: PROMOTER
      8 <130 > FILE REFERENCE: 078883/0139
10 <140> CURRENT APPLICATION NUMBER: US/10/009,570
11 <141> CURRENT FILING DATE: 2001-12-12
     13 <150> PRIOR APPLICATION NUMBER: PCT/GB00/02641
     14 <151> PRIOR FILING DATE: 2000-06-15
     16 <150> PRIOR APPLICATION NUMBER: GB 9914210.1
     17 <151> PRIOR FILING DATE: 1999-06-17
     19 <160 > NUMBER OF SEQ ID NOS: 43
     21 <170 > SOFTWARE: PatentIn Ver. 2.1
     23 <210 > SEO ID NO: 1
     24 <211 · LENGTH: 1772
     25 < 212 × TYPE: DNA
     26 < 213 - ORGANISM: Artificial Sequence
     28 < 220 · FEATURE:
     29 <223 - OTHER INFORMATION: Description of Artificial Sequence: Synthetic
     31)
              promoter sequence
     32 < 400 \times SEQUENCE: 1
     33 actttagata ataaagtaag toacaagaaa aataaataat aattocaaat tittittaata 60
     eta 4 agacgagtgg tcaaacagta caagtaaaaa ctcaaaattc cttatattat gggacttata 120
     35 ttatgggacg gaggaagtag aagattgtag ccaagaaaaa aacaaaaaca aacacaccgc 180
     36 calctggcag geatgeatot taggteggea cattgagagg teggeagtag aegagttace 240
     37 ctacacaact gettetteag tgagetaget geatgttetg ttetgeattt acattgeagg 300\,
     38 cageagetag caacagittig caggaacaat egataateca tigigicagg gaggaacaig 360
     eta 9 gaqaaaaacc ggqqctggag acqaacggga gcaqctgtac cgtacgtttc tgaaggctga 420
     40 acceatetge qaaateegea gattggtttg tteaatteea acttgeagte etteagattg 480
     41 gttgcatgtt caaccqtagt acatctgaaa aatgaagtgt taaatacctt gagaagacct 540
     42 teatqqaaqe atqeetqeaq qeqattaqet aaqaaaaaaa aaataaatqt actttteqaa 600
     43 acttaatttt ggagttagat titagggigt ticcaicgia gigtattitc tactatigca 600
     44 gtittaaaccg ctaatagtca gatataaaat tittatctata gatcatttat aaatcattit 720
     45 tagitgette gitteatitit etaceaetta teaaceatag eteaaetgat eaatigaeaa 780
     4n taaaagttac taaacgacat cgctcatcac acacccaacg ctcaccgatg ggtgcctctc 840
     47 gaccacgagt tragcactrg tycaacatat argegrygga ryaacatcra cryatycycc 900
     48 atgegaattt tagegittegi teatgaeget teeaaeggea eagaggetga geageageat 960
     49 gcatgcatgg etettgtgaa aacaaaaaag gttactggta aatgacatge tgetgtaget 1020
     50 agttageaga atgeaaggee catgeatatg caatgetatg caacaagtat agtaceagea 1080
     51 tgtatggtag ceagetaact aatetateag eagaggeage aagetegtge atggtgtgat 1140
     52 gcaettetet ecagtaatet agtggtaatt ticaceeaaa gegitgetea fatggaeagt 1200
     53 aattagtaat attaccaagg ticacaatco ogtiacetga ccaaatacta otcacgaatg 1260
     54 qlaketetgg titlegtiaa aaceyttyyt äääccägeää ääätägaeää äätttyteää 1320
     55 aattittaaat tittagittiti tiittitaacit agoogggaaa ootigaagit tigigoigitog 1380
     56 agetgteetg ggaaggaegg tittggitgg gattgtgaae eetggitaet geacticati 1440
     57 titqaacaga tattagigca acagacaaat gocaacqoat tittittoigi tiacoggcaa 1500
     58 gotgaagott ttacqatooo catacogoog ttgotgoaaa cotgocaaga aagagoagoa 1560
```

59 gaaacaggtg toattitigtg giggaaagoo aagtaaagta aacagaagat ggaagatagt 1620

DATE: 01/14/2002

PATENT APPLICATION: US/10/009,570

TIME: 07:39:10

Input Set: A:\78883169.app

Output Set: N:\CRF3\01142002\J009570.raw

 60 qaqqaccaqq qaqtqaqqca qqqqacacat qqcccacqcc tccctqcaca ttttcqtqta 1680 61 taaatacagg tggatgcatc geteteccag catecategg tintetgete tgttcateca 1740 62 tagagtttee teetettete etteagtgea ag 1772 65 <210 · SEQ ID NO: 2 66 <211 · LENGTH: 865 67 -: 212 · TYPE: DNA 68 - 013 - ORGANISM: Artificial Sequence 70 -(320 - FEATURE: 71 - 1223 - OTHER INFORMATION: Description of Artificial Sequence: Synthetic 72 intron nucleotide sequence 74 -: 400 > SEQUENCE: 2 75 qlaqaqaaqa qoatqtqtqt qtqtqtqtqt qaactqtqaa qtqcaqaqtq cttctqtaqt 60 7κ totqtgttat geocatageg atoetgetag gategetgot atggatgoat gatgttatgg 12077 thaatetetg aattacagta gggaettete tgagatetet ggattagtgg ggggtgetaa 180 78 anthirttet ggttgcatca gcttgggttt ctgggattgg tgtgggttct tgctctgaat 240 79 thtqqttcag aatgtcgatt tgttttgtgt ttgccctctg aagttgagag tagctatgat 300 80 neathecagea cagaactgea ggteeetgee tgeeggeage atatacagga catgecattt 360 81 tocaagetet gagettatag titletetitt agagttette tietigeata aleigigtte 420 82 tetaacaaag aagcaagatt tagcaacttt attcagagac aagaaaagga tetggcaacc 480 83 iiintgtttet gttttateet actegtamag attgttattt amgemmaamt tiecemamag 540 84 tittaaatat aatticcatg atgigccact cicatgicci tgaacciggc actcattatg 600 85 qqotootoag aagtgotgta gotaatgtoa otaatotttt gtatotttgt togtagtott 660 86 qualititate atgettated ettigtgett tecatettie atetecaaat etcategeaa 720 87 tqtttttgae ttotagtagg ggttttagta cetttttgtt agataagtae atccaaatte 780 88 tytttattta ticaaaaatc attoigitta ticacigaaa acattigico attoaaigga 840 89 atogtaaact gtotgtgttt ttoag 865 92 <210> SEQ ID NO: 3 9+ - 211> LENGTH: 1803 94 <212> TYPE: DNA 95 <2135 ORGANISM: Artificial Sequence 97 <2200 FEATURE: 98 <223% OTHER INFORMATION: Description of Artificial Sequence: Synthetic $Q \ddot{Q}$ nucleotide sequence 101 <400> SEQUENCE: 3 102 actitagata ataaagtaag toacaagaaa aataaataat aattocaaat tiittitaata 60103 agacgagtgg tcaaacagta caagtaaaaa ctcaaaattc cttatattat gggacttata 120 104 ttatqqqacq gaggaagtag aagattgtaq ccaagaaaaa aacaaaaaca aacacaccgc 180 105 cancetygeag geatgeatet taggteggea cattgagagg teggeagtag acgagttace 240 106 ctacacaact gettetteag tgagetaget geatgttetg ttetgeattt acattgeagg 300 107 caqcaqctag caacaqtttq caqqaacaat cqataatcca ttqtqtcagg qaqqaacatg 360 108 gagaaaaacc qgggctggag acgaacggga gcagctgtac cqtacqtttc tgaaggctga 420109 acceptetge gasateeges gattggtttg thesattees settgesite ettesgattg 480 110 gttgcatgtt caaccqtagt acatctgaaa aatgaagtgt taaatacctt gagaagacct 540 lll teatggaage atgeetgeag gegattaget aagaaaaaaa aaataaatgt aettttegaa 600112 actitaatitit ggagttagat titagggtgt ticcategta gigtatitic tactatigea 660113 qtttaaaccq ctaataqtca qatataaaat tttatctata qatcatttat aaatcatttt 720 114 taqttqcttc gttcattttt ctaccactta tcaaccatag ctcaactyal caaligacaa 780 115 taaaagttac taaacgacat cgctcatcac acacccaacg ctcaccgatg ggtgcctctc 840 116 gaccacqaqt ttagcacttq tqcaacatat atgcgtgcga tqaacatcta ctgatgcgcc 900

DATE: 01/14/2002 TIME: 07:39:10

PATENT APPLICATION: US/10/009,570

Input Set : A:\78883169.app

Output Set: N:\CRF3\01142002\J009570.raw

117 atgegaattt tagegttegt teatgaeget tecaaeggea eagaggetga geageageat 960 118 gcatgcatgg ctcttqtqaa aacaaaaaag gttactggta aatgacatgc tgctqtagct 1020 119 aqttaqcaqa atqcaaqqcc catqcatatq caatqctatq caacaaqtat aqtaccaqca 1080 120 tqtatqqtaq ccaqctaact aatctatcaq caqaqqcaqc aaqctcqtqc atgqtqtqat 1140 1.11 geactictet coagtaatet agtgytaatt ticacccaaa gegitigetea tatggacagt 1200 122 aattagtaat attaccaagg ttcacaatcc cgttacctga ccaaatacta ctcacgaatg 1260 123 qtatetetgg tttteqttaa aaccqttqqt aaaccagcaa aaatagacaa aatttgteaa 1320 124 aattttaaat titagittit titttaacti ageegggaaa eetigaagit tytgetyteg 1380 125 agetqteetg qqaaqqaeqq ttttqqttqq qattqtqaac cetqqttaet gcaetteatt 1440 136 tttgaacaga tattagtgca acagacaaat gecaacgcat ttttttctgt ttaccggcaa 1900 127 getgaagett ttaegateee eataeegeeg ttgetgeaaa eetgeeaaga aagageagea 1560 1.8 gaaacaggtg toattitgtg giggaaagco aagtaaagta aacagaagai ggaagatagi 1620 129 gaggaccagg gagtgaggca ggggacacat ggcccacgcc tccctgcaca ttttcgtgta 1680 130 taaatacagg tggatgcate geteteeeag catecategg ttetetgete tgtteateea 1740 131 tagagettee teetettete etteagtgea aggettgagg atecaaetag aagatageaa 1800 132 tag 1803 135 <210> SEQ ID NO: 4 146 (211> LENGTH: 86 137 -: 212 > TYPE: DNA 138 - (213 > ORGANISM: Artificial Sequence 140 <320 > FEATURE: 141 (223) OTHER INFORMATION: Description of Artificial Sequence: Synthetic exon nucleotide sequence 144 -: 400 > SEQUENCE: 4 145 daggtggatg catogetete coageateca teggttetet getetgttea tecatagagt 60 146 ticetectet teteetteag tgeaag 86 149 -: 210 > SEQ ID NO: 5 150 -: 211> LENGTH: 31 151 - 212 > TYPE: DNA 152 -213> ORGANISM: Artificial Sequence 154 - 1220 > FEATURE: 155 (223) OTHER INFORMATION: Description of Artificial Sequence: Synthetic exon nucleotide sequence 156 158 - 400 - SEQUENCE: 5 31 159 qct.t.qaggat ccaactagaa gatagcaatg g 162 -2105 SEQ ID NO: 6 163 - 211> LENGTH: 1686 164 + 212 > TYPE: DNA165 -213> ORGANISM: Artificial Sequence 167 -(220) FEATURE: 168 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 169 promoter sequence 171 4400> SEQUENCE: 6 172 actitagata ataaagtaag toacaagaaa aataaataat aattocaaat titittaata 60 173 agangagtigg toaaacagta caagtaaaaa otoaaaatto ottatattat gggacttata 120 174 ttatgggacg gaggaagtag aagattgtag ccaagaaaaa aacaaaaaca aacaccegc 180 175 cacciqqoaq qoatqoatot taqqioqqoa cattqaqaqq toqqoaqiaq acqaqitaco 240

176 ctacacaact gettetteag tgagetaget geatgttetg ttetgeattt acattgeagg 300 177 cageagetag caacagtttg caggaacaat egataateea ttgtgteagg gaggaacatg 360

PATENT APPLICATION: US/10/009,570

DATE: 01/14/2002 TIME: 07:39:10

Input Set : A:\78883169.app

Output Set: N:\CRF3\01142002\J009570.raw

178 gagaaaaacc ggggctggag acgaacggga gcagctgtac cgtacgtttc tgaaggctga 420 179 accoatctgc quaatccqca gattqqtttq ttcaattcca acttqcaqtc cttcaqattq 480 180 gttgcatgtt caacegtagt acatetgaaa aatgaagtgt taaatacett gagaagacet 540 181 teatqqaaqe atqeetqeaq qeqattaqet aaqaaaaaa aaataaatqt actttteqaa 600 182 actionatite granting at titinggript teccatoria gigitatite tactatica 660 183 qtttaaaccq ctaataqtca qatataaaat tttatctata qatcatttat aaatcatttt 720 184 tagttgcttc gttcattttt ctaccactta tcaaccatag ctcaactgat caattgacaa 780 185 tamaagttac tamacgacat egetcatcac acacccaacg etcaccgatg ggtgeetete 840 186 garcacqaqt ttagcacttq tqcaacatat atqcqtqcqa tqaacatcta ctqatqcqcc 900 187 atgcgaattt tagcgttegt teatgaeget tecaaeggea cagaggetga geageageat 960 188 gcutgcatgg ctcttgtgaa aacaaaaaag gttactggta aatgacatgc tgctgtagct 1020 189 agitagcaga atgcaaggee catgeatatg caatgetatg caacaagtat agtaccagea 1080 190 tqt.atqqtaq ccaqctaact aatctatcaq cagaggcagc aagctcgtgc atggtgtgat 1140 191 genettetet cengtaatet agtggtaatt ttenecenaa gegttgeten tatggacagt 1200192 aattagtaat attaccaagg ticacaatco ogttacciga ccaaatacta cicacgaatg 1260 193 qtatetetgg ttttegttaa aaccgttggt aaaccagcaa aaatagacaa aatttgtcaa 1320 194 aailttaaat titagittit titttaacti ageegggaaa eetigaagit tytyetyteg 1380 195 agotgtoctg ggaaggaogg tittggttgg gattgtgaac cotggttact gcacticatt 1440 196 tittgaacaga tattagtgca acagacaaat gccaacgcat tittitcigt tiaccggcaa 1500 197 getgaagett ttacqateec catacegeeg ttgetgeaaa eetgeeaaga aagageagea 1560 149 qaqqaccaqq qaqtqaqqca qqqqacacat qqcccacqcc tecetqcaca ttttcqtqta 1680 200 taaata 203 <210> SEO ID NO: 7 204 <211> LENGTH: 2668 205 +212> TYPE: DNA 206 <213> ORGANISM: Artificial Sequence 208 <220> FEATURE: 209 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic 210 promoter sequence of the present invention 212 <400> SEQUENCE: 7 213 actitaqata ataaaqtaag toacaaqaaa aataaataat aattocaaat tiittitaata 60214 agacqaqtqq tcaaacaqta caaqtaaaaa ctcaaaatto cttatattat qqqacttata 120 215 ttatgggacy gaggaagtag aagattgtag ccaagaaaaa aacaaaaaca aacacccgc 180 216 caretggeag geatgeatet taggteggea cattgagagg teggeagtag acgagttace 240 217 ctaracaact gettetteag tgagetaget geatgttetg ttetgeattt acattgeagg 300 218 cagcagetay caacagtitig caggaacaat cgataateca tigitgicagg gaggaacaig 360 219 gaqaaaaacc ggggctggag acgaacggga gcagctgtac cgtacgtttc tgaaggctga 420 220 acreatetge gasateeges gattggtttg ttesattees settgesagte ettesgattg 480221 gttgcatgtt caacegtagt acatetgaaa aatgaagtgt taaatacett gagaagacet 540222 teatggaage atgeetgeag gegattaget aagaaaaaaa aaataaatgt aettttegaa 600 223 actioatitic ggagitagat titogggigt ticcalcyta gigitatitic taciatiqea 660224 gtitaaaccg ctaatagtca gatataaaat titatctata gatcatttat aaatcattit 720 225 tagittgette gitteatiiit etaceaetta teaaceatag eteaaetgat eaatigaeaa 780226 taaaagttac taaacgacat cgctcatcac acacccaacg ctcaccgatg ggtgcctctc 840 227 garcacqaqt ttaqcacttg tgcaacatat atgcgtgcga tgaacatcta ctgatgcgcc 900 228 atgogaatti tagogiloot roatgargot todaaqqqda qaqqqqtqa qoaqqqat 960 229 gcatgcatgg ctcttgtgaa aacaaaaaag gttactggta aatgacatgc tgctgtagct 1020 230 agttagcaga atgcaaggee catgcatatg caatgctatg caacaagtat agtaccagca 1080

DATE: 01/14/2002

PATENT APPLICATION: US/10/009,570

TIME: 07:39:10

Input Set : A:\78883169.app

Output Set: N:\CRF3\01142002\J009570.raw

231 tyratyytag ccayetaaet aatetateag cagaggeage aagetegtge atggtgtgat 1140 132 geactivetet ecagtaatet agtggtaatt tieacecaaa gegitigetea tatggacagt 1200 233 aattagtaat attaccaagg ttcacaatco ogttacotga ocaaatacta ofcacgaatg 1260 234 gtatototogg tittogttaa aaccottogt aaaccagcaa aaatagacaa aatitogtcaa 1320 235 aattttaaat titagititti tiittaacti ageegygaaa eetigaagit tgigetgieg 1380 ± 36 agongheoly ggaaggaogg thinggtigg gaingigado congginact geachicath 1440237 tittgaacaga tattagtgca acagacaaat gccaacgcat tittitctgt tiaccggcaa 1500 238 getgaagett ttacgateee catacegeeg ttgetgeaaa eetgeeaaga aagageagea 1560 240 qaqqaccaqq qaqtqaqqca qqqqacacat ggcccacqcc tccctgcaca ttttcqtqta 1680 24) taaatacagg tggatgcate geteteecag catecategg ttetetgete tgtteateca 1740 242 tagagtttcc tectettete etteagtgea aggtagagaa gageatgtgt gtgtgtgtt 1800 ± 43 gtgaactgtg aagtgeagag tgettetgta gttetgtgtt atgteeatag tgatettgtt 1860 ± 44 aggattette ctategatec ateatettat egitaatoto teaattacae taegeectto 1920245 totgagatot otggattagt ggggggtgot aaattttttt otggttgoat cagottgggt 1980 246 thotogogath ggtgtgggtt officetolga attiffggtto agaatgtoga tittgttttgt 2040 247 gtttgccctc tgaagttgag agtagctatg atccatccag cacagaactg caggtccctg 2100 248 octgooggea gcatatacag gacatgccat titigcaaget eigggettat ggittetett 2160 249 tiggaqtict tettetigea igatetgigt tetetaacaa agaagcaaga titageaact 2220 250 thatteagag acaagaaaag gatotggcaa cottttgttt otgttttato otactogtaa 2280 251 agattgttat ttaagcaaaa atttoocaaa agttttaaat ataatttooa tgatgtgooa 2340 252 officeatigto offigaacotig goactoaffa tigggofficeto agaagtigetig tagoffaatigt 2400 253 cactaatett tigitatetit qitoqiaqte tiqitattita igaiqettat ceetitigige 2460 254 tittecatgit igaigteeaa aigteaigge aaigtittiig aettelagia ggggtittag 2520 255 tarrettitig tragataagt acatocaaat tergittatt tatteaaaaa teatietgit 2580256 tatteactga aaacatttgt ccatteaatg gaategtaaa etgtetgtgt tittteagget 2640 257 tgaggatoca actagaagat agcaatgg 2668 260 <210 > SEQ ID NO: 8 261 - 211 > LENGTH: 27 262 - 212 > TYPE: DNA 263 (213> ORGANISM: Artificial Sequence 265 -: 220 - FEATURE: 266 < 223 + OTHER INFORMATION: Description of Artificial Sequence: Primer 268 -: 400 - SEQUENCE: 8 27 269 ggatectaat acgactcact ataggge $272 \cdot 210 \cdot \text{SEQ ID NO: 9}$ 273 < 211 + LENGTH: 17 274 <212 - TYPE: DNA 275 <213 : ORGANISM: Artificial Sequence 277 - 2205 FEATURE: 278 - 223 - OTHER INFORMATION: Description of Artificial Sequence: Primer 280 -: 400: SEQUENCE: 9 17 181 aataqqqctc qaqcqqc 284 +210: SEQ ID NO: 10 285 -2111 LENGTH: 22 286 - 212 - TYPE: DNA 287 <213: ORGANISM: Artificial Sequence 289 <220> FEATURE: 290 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/009,570

DATE: 01/14/2002 TIME: 07:39:11

Input Set : A:\78883169.app

Output Set: N:\CRF3\01142002\J009570.raw

L:10 M:270 C: Current Application Number differs, Replaced Application Number L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date